

WHAT IS CLAIMED IS:

1. A cannula, comprising:
a proximal portion; and
a distal portion which comprises a spiral cut along a longitudinal axis of the cannula, wherein the cannula forms a continuum of material.
2. The cannula of Claim 1, wherein the spiral cut is taken at about sixty to about eighty degrees from the longitudinal axis of the cannula, and is about 0.001 to about 0.002 inches (about 0.25 to about 0.5 mm) wide.
3. The cannula of Claim 1, wherein the cannula and the continuum further comprise a grasping portion.
4. The cannula of Claim 1, wherein the cannula and the continuum further comprise a grasping portion and an intermediate portion between the grasping portion and the distal portion.
5. The cannula of Claim 1, wherein the cannula and the continuum further comprise an intermediate portion about 0.5 inches long to about 2 inches (about 13 mm to about 51 mm) long, proximal to the distal portion, having a spiral cut with a pitch less than a pitch of the distal portion.
6. The cannula of Claim 1, wherein an outer diameter of the cannula is from about 0.022 inches (0.56 mm, 1.7 Fr) to about 0.034 inches (0.86 mm, 2.6 Fr).
7. The cannula of Claim 1, further comprising a grasper portion at a distal end of the cannula, the grasper portion forming a continuum with the cannula.
8. The cannula of Claim 1, wherein the spiral cut is selected from the group consisting of a continuous cut and a discontinuous cut.

9. The cannula of Claim 1, further comprising a device at a distal end of the cannula for removing material, the device selected from the group consisting of a blade, a slicing-type blade, a slicing-type blade and a separate barbed stylet through a center of the cannula, a helix, and a helical catcher/extractor, wherein the cannula and the device for removing material form a continuum.

10. The cannula of Claim 1, further comprising a laser grasper, the laser grasper comprising a grasper and cannula forming a continuum, and further comprising a laser fiber within the cannula.

11. The cannula of Claim 1, further comprising a ureteroscope comprising an optical fiber, and an irrigation system.

12. The cannula of Claim 1, further comprising a grasper, wherein the grasper is not a part of the continuum.

13. The cannula of Claim 1, wherein the cannula comprises a material selected from the group consisting of stainless steel, Nitinol, a shape-memory alloy, a polymer, and a polymer composite.

14. The cannula of Claim 1, further comprising a sheath enclosing at least a portion of the cannula.

15. A cannula, comprising:

a proximal portion;

a distal portion which comprises a spiral cut, wherein the spiral cut is taken at an angle of from about sixty degrees to about eighty degrees from a longitudinal axis of the cannula, wherein the proximal portion and the distal portion comprise a continuum of metal; and

a first intermediate portion between the proximal portion and the distal portion.

16. The cannula of Claim 15, wherein the spiral cut is about 0.001 to 0.002 inches wide.

17. The cannula of Claim 15, wherein the proximal portion is from about 3 feet long to about 5 feet long and a portion with a spiral cut is from about 2 inches long to about 6 inches long (about 7.5 cm to about 15 cm long).

18. The cannula of Claim 15, wherein the cannula and the continuum further comprise a grasping portion.

19. The cannula of Claim 15, further comprising a grasper portion at a distal end of the cannula, the grasper portion forming a continuum with the cannula.

20. The cannula of Claim 15, further comprising a grasper portion at a distal end of the grasper, the grasper and cannula forming a continuum, and further comprising a laser fiber within the cannula.

21. The cannula of Claim 15, further comprising a second intermediate portion between a portion with a spiral cut and the grasping portion.

22. The cannula of Claim 21, wherein the second intermediate portion has material removed in a spiral cut with a pitch less than a pitch of the distal portion.

23. The cannula of Claim 15, further comprising a device for removing material selected from the group consisting of a blade, a slicing-type blade, a slicing-type blade and a separate barbed stylet through a center of the cannula, a helical catcher/extractor, and a helix.

24. The cannula of Claim 15, further comprising a grasper, wherein the grasper is not part of the continuum.

25. The cannula of Claim 15, wherein the spiral cut is selected from the group consisting of a continuous cut and a discontinuous cut.

26. The cannula of Claim 15, further comprising a sheath enclosing at least a portion of the cannula.

27. A method of extracting an object, the method comprising:
placing a grasper near the object;
grasping the object; and
removing the object, wherein the grasper has been made from a cannula, the cannula having a distal portion which comprises a spiral cut from a longitudinal axis of the cannula.

28. The method of Claim 27, wherein the grasper is a laser grasper and further comprising breaking the object into small pieces.

29. The method of Claim 27, wherein the grasper further comprises an optical device and a irrigation system, and further comprising irrigating and viewing the object.